DOCUMENT RESUME

ED 276 738 TM 860 659

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TITLE Assessing Basic Skills Needs of High School and College Students.
PUB DATE 30 Jan 85
NOTE 51p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS *Basic Skills; Criterion Referenced Tests; Diagnostic Teaching; *Diagnostic Tests; *Educationally Disadvantaged; *Educational Needs; Evaluation Utilization; Higher Education; High Schools; *Needs Assessment; Norm Referenced Tests; Student Evaluation; Student Needs; Testing Problems

ABSTRACT

This paper (1) identifies strategies for assessing student instructional needs so that educational prescriptions can be developed to promote learning; and (2) relates the identification of student needs to the development of learning prescriptions. The population discussed includes high school and college students who because of social, economic, political, or educational reasons have not had adequate opportunity to master the basic skills in mathematics and reading. Student needs may be assessed using informal strategies such as interviews, anecdotal information, and grades. Formal methods include specialized surveys, student questionnaires, and tests. Norm-referenced achievement or aptitude tests are economical, effective methods of assessment, when they are valid and based on relevant objectives. However, they may not be valid and reliable for a special, minority sample. Criterion-referenced and mastery tests are useful when their content is similar to the subject objectives. Diagnostic tests may have low reliability and high intercorrelations among subtests, but may be useful in assessing learning disabilities. Information from these tests can be incorporated into a diagnostic or prescriptive learning program based on students' knowledge, capacity to learn, and weaknesses. This process is described, as are some effective prescriptive instructional programs. (GDC)

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ASSESSING BASIC SKILLS NEEDS OF HIGH SCHOOL AND COLLEGE STUDENTS

Zollie Stevenson, Jr., Ph.D.

January 30, 1985

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Preface

The scope of this resource paper is to identify strategies for assessing student instructional needs so that educational prescriptions can be developed to promote learning. The first section focuses on assessing student needs through the use of formal and/or informal needs assessments. Strengths and weaknesses of informal and formal strategies are presented. The next section relates the identification of student needs to the development of learning prescriptions. A model is provided which can be applied to individuals or groups. Finally, the Appendices contain selected journal references pertaining to diagnostic/prescriptive learning approaches, a glossary of key terms, selected sample diagnostic/prescriptive learning programs and a sampling of tests.

After studying this paper, the learner should be able to:

1. Identify examples of a formal and an informal needs assessment.
2. Distinguish among norm-referenced, criterion-referenced and diagnostic tests.
3. Discuss constraints of norm-referenced, criterion-referenced and diagnostic tests.
4. Relate needs assessment strategies to the prescriptive

learning process.

5. Discuss the diagnostic/prescriptive approach to learning.
6. Use resources in the Appendix to further knowledge pertaining to assessing students' needs and the diagnostic approach to learning.

ASSESSING BASIC SKILLS NEEDS OF HIGH SCHOOL AND COLLEGE STUDENTS

One of the greatest challenges remaining for American educators in the 1980's is the provision of basic skills educational needs to our students in the public schools and colleges. In 1983, the National Commission on Excellence in Education issued a report, A Nation at Risk, which concluded that

> "the educational foundations of our society (1) are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people."

Nation at Risk focused on educational areas where American students lacked competence, such as basic skills in mathematics, writing and reading, and suggested strategies for meeting student deficits. Among the strategies proposed were the development of basic education plans that would promote student mastery in reading, writing and mathematics, minimal standards for promotion from one grade to the next, and minimum competency assessment as a condition of receiving a high school diploma (NIE, 1984). In addition, many states, such as North Carolina, will be requiring students to have

completed a specific set of courses at predetermined mastery levels during high school to be admitted to their University systems of higher education. Educational reforms such as those noted could have a dramatic impact on special student populations.

The special student populations of interest are not lower level exceptional students. They are students who because of social, economic, political or educational reasons have not had adequate access to opportunities which would have allowed them to master basic skills in mathematics and reading. They are students with potential and motivation who are throttled by deficits in specific basic skills areas.

This resource paper will focus on two areas: 1. General strategies for assessing basic skills needs, and 2. Diagnostic and prescriptive learning using needs assessment strategies. The first component will focus on strategies for assessing basic skills needs, use of test data in determining student needs and limitations of test data. The final section will present an approach for using needs-assessment information to diagnose students' basic skills needs and to prescribe specific strategies for meeting student needs.

Strategies for Assessing Basic Skills Needs

The first step in assessing basic skills needs of students should involve the development of an informal or formal needs assessment. The needs assessment should be directed towards identifying strengths and weaknesses of students.

Informal methods for assessing student needs involves strategies that do not require data manipulation. Common approaches are to evaluate student grades, collect anecdotal information from teachers, parents and other partners in the educational process, and questioning the student relative to perceived strengths and weaknesses. Student grades are generally considered to be objective indicators, but because differential school quality as well as location can inflate or deflate grades, we look at grades in the context of a special student population as subjective indicators. Anecdotal information secured from teachers, parents, counselors, etc., can provide insight into a student's needs as perceived by "partners" in the educational process. Educational partners have day-to-day familiarity with the student in a variety of situations and can provide insights that can help in the formulation of needs patterns. Finally, the student has knowledge of his or her strengths and weaknesses and can provide information on problematic subjects, study methods and other factors that affect

learning. All of the informal methods provide subjective information that can be useful in assessing needs. Objective types of information are also important in assessing needs.

Formal needs assessments involve data collection and evaluation. Data is collected from student questionnaires or survey responses as well as test administrations. The data collected is analyzed and evaluated so that a profile of strengths and weaknesses can be generated. Needs assessments are developed by educational personnel so that program objectives can be developed based on student needs.

Surveys and questionnaires generally focus on strengths and weaknesses in specific subject areas, study habits and interests. Surveys and questionnaires yield student perceptions of their strengths and weaknesses. Students and educators gain insight into student needs based on surveys and questionnaires.

Tests are administered to students, scored and profiles generated and analyzed. Student strengths and weaknesses are evaluated and related to subject area objectives. Educators are able to determine students' instructional needs in an objective fashion.

Tests are not infallible measures of student ability. Use of tests in assessing student attributes should be

conducted using the following guidelines:

"1. Tests are samples of behavior. (2)
2. Tests do not reveal limits or capacities directly.
3. Tests purporting to measure a particular ability or skill should have adequate reliability and validity.
4. Tests should be interpreted in light of the child's cultural background, primary language, and handicapping conditions.
5. Test scores and other test performances may be effected by temporary states of fatigue, anxiety, or stress.
6. Tests purporting to measure the same ability may provide different scores for that ability.
7. Test results should never be interpreted in isolation.
8. Test results are dependent on the child's cooperation and motivation."

Tests provide useful and valuable information when used properly and appropriately. When used inappropriately, tests can be harmful. The next sections will focus on the three commonly used types of tests: Norm Referenced, Criterion Referenced, and Diagnostic.

Norm Referenced Measurement

A norm referenced test is defined as:

> "A test designed to measure the achievement of an individual or group as compared with the achievement of other students who have taken the same test under standardized conditions." (3)

Norm referenced tests provide valuable information about a child's level of functioning in the areas measured by the tests. Norm referenced tests are economical in terms of the time required to administer them and the behavioral information that they provide. Comparisons can be made with other individuals more accurately than would occur with observation or subjective techniques alone. The key feature of a norm referenced test is the ability to compare a student profile with other students in her class as well as other students in the state and nation.

Some norm referenced tests provide objective mastery information indicating the student's level of mastery in response to test items associated with a predetermined set of learning objectives. Objective mastery information is useful in forming instructional groups in classes and targeting classroom instructional needs. Norm referenced tests can be quite useful in determining student needs when test content

and objectives correlate with what is being taught in school.

Two types of norm referenced tests, commonly used in evaluating student needs, are achievement and aptitude tests.

> "Achievement tests are measures constructed to assess the extent of an individual's knowledge about subjects taught in school." (4)

> "Aptitude tests are measures designed to find out about an individuals talent or capacity for particular lines of endeavor." (5)

Many student development programs use achievement tests to measure present knowledge, skills and understanding of school subjects. Aptitude tests, on the other hand, measure the cumulative effects of learning under uncontrolled conditions. In essence, an aptitude test assesses information that is influenced but not limited to classroom learning (e.g., such as principles and concepts that can be applied to other circumstances depending on the student's ability level).

Achievement and aptitude tests differ in their respective uses.

> "Aptitude tests serve to predict subsequent performance. Achievement tests generally (6)

represent a terminal evaluation of the individual's status after training has been completed."

The distinction between aptitude and achievement tests is muddled by their definitions (achievement as a measure of the effects of learning, aptitude as innate capacity to learn) and their varied applications. The California Achievement Test, Level C (CAT) (CTB/McGraw-Hill, 1977) is frequently used to assess students' achievement. The CAT has also been used to predict success in college. The CAT, Level 18C has proven to be a better predictor of success in college for North Carolina students than has the Scholastic Aptitude Test (SAT) (NCDPI, 1980).

Important considerations when determining if an aptitude or achievement measure would be useful in aiding a special student population is the intended use of the test. A good achievement test should have high content validity and be based on objectives relevant to the student course of study. A suitable aptitude test should have high predictive criterion-oriented validity (Anastasi, 1979).

A trend that will help to replace the distinctions between aptitude and achievement tests is the emerging concept of achievement and aptitude tests as measures of "developed abilities."

"All ability tests--whether they be designed as general intelligence tests, multiple aptitude batteries, special aptitude tests or achievement tests--measure the level of development attained by the individual in one or more abilities." (7)

Achievement and aptitude tests have a variety of uses. They aid in the assignment of grades, as an element in identifying and monitoring the progress of special students, as an evaluator of student strengths and weaknesses and as an indicator of subsequent learning. Achievement tests can also be used to adapt instruction to individual needs.

The determination of basic skills needs using norm referenced test data varies depending on whether the test is an aptitude or achievement measure. Achievement tests yield a variety of scores ranging from raw scores, scale scores, standard scores (including stanines), grade equivalents and percentile ranks (see Appendix for score type definitions). Many special programs provide subject specific academic assistance to students whose scores fall between the 40-50th percentile rank on achievement tests. Students whose scores are at the 50th percentile rank have scores higher than 50 percent of the students in the group who took the same achievement test. Less often, students are targeted for academic assistance when their stanine scores reflect below average performance, when their grade equivalent scores are

two years below grade level or when their standard scores are greater than one standard deviation below the norm on the achievement test.

Most aptitude tests yield the same variety of scores that were mentioned above. The most commonly used scores to select students needing academic support are the standard scores or percentile rank. When the standard score is used, some consideration should be directed towards recent national averages on aptitude tests. For example, the Scholastic Aptitude Test (SAT) used standard scores converted from raw scores with a mean of 500 and a standard deviation of 100. The student score national averages on the SAT in 1984 was 426 (verbal) and 467 (quantitative). In North Carolina, SAT student scores were 396 (verbal) and 431 (quantitative) in 1984. The North Carolina data reflect state averages nearly one standard deviation below the mean. Should we use national averages or state averages in selecting students for academic assistance? The correct answer is that student scores that best reflect the population in question should be used.

A notable concern with achievement and aptitude tests is their tendency to overpredict or underpredict the achievement and potential of minority students. Types of statistical bias apt to occur include slope and intercept bias. Anastasi (1979) details an explanation of statistical bias. Important

considerations in the selection of tests for a special or minority student population are the standardization sample on which the test was normed and the determination if reliability and validity coefficients are different for minority students when compared to white students. If the special student population is not represented in the standardization sample (usually as the predominant racial classification of the special student group) and/or if the reliability and validity coefficients are too low for minority students in comparison to white students, then the achievement or aptitude test is not as valid or reliable a measure for the group in question.

Criterion Referenced Measurement

A criterion referenced test is defined as:

> "A test designed to provide information on the (8) specific knowledge or skills possed by a student in a particular subject area."

Criterion referenced tests provide valuable information relative to student knowledge in specific areas. A criterion referenced test focuses on what the person can do or knows, not how she compares with others. In this type of test, specific leearning objectives are defined and exercises are

developed to achieve each objective. The result is a test that aids in planning individualized instruction based on an individual's specific needs. In addition, ability level groups can be set up in the classroom to provide specific needs of students as opposed to teaching of heterogenous groupings of students above or below their ability levels. Data generated in a criterion referenced test is usually reported in terms of operations that an individual has been able to master in a subject area, such as specific kinds of mathematical functions mastered, reading difficulty level comprehension, etc.

Since the goal of a criterion referenced test is to obtain measures of student performance on clearly specified objectives and performance indicators, the design of criterion referenced tests require certain features in their construction. Criterion referenced testing requires:

"1. A clearly defined and delineated domain (9) of learning tasks.
2. that instructional objectives be clearly defined in behavioral or performance terms.
3. that standards of performance be clearly specified.
4. that student performance be adequately sampled within each use area of performance.
5. that test items be selected on the basis of how

well they reflect the behavior specified in the instructional objectives.

6. a scoring and reporting system that adequately describes student performance in clearly defined learning tasks."

Different test development issues arise when a criterion referenced test is concerned with mastery of minimum standards if applied to student development beyond the minimum level. In the assessment of mastery, the domain of learning tasks is limited and can be defined more clearly. As a result it is easier to set standards, state objectives and select representative test items. When student development beyond the minimum becomes the focus of criterion referenced testing, the body of knowledge expands and the difficulty of stating specific objectives and selecting items to assess performance becomes more challenging.

Mastery testing focuses on basic skills knowledge. The assessment of mastery yields an all or none score: either an individual has mastered a subject or has not mastered a subject at the predetermined level of mastery. Some tests use three indicators of performance: mastery (80%), needs review (65-79%), and non-mastery (65%). The level of mastery is generally set high (e.g., 80-85% of objective items answered correctly to achieve mastery).

When the goal of assessment is to measure student performance beyond minimum essentials, the task of developing an appropriate test becomes more difficult. Learning outcomes in developmental tests involved more complex processes (such as understanding and thinking skills), the learning domain indicators become unlimited and learning rarely proceeds in neat sequences. In addition, Gronlund (1973) states that:

> "instructional objectives represent goals to work toward rather than goals to be fully achieved, . . . because the emphasis here is on the continuing development of understanding and skill." (10)

In setting performance standards in developmental tests, norm referenced interpretations are frequently used in concert with criterion referenced interpretations. Comparison of individual scores with those of group members (e.g., 30% of the students performed less well than did the student in question) and specific references to what the student can do (e.g., can find least common denominators in fractions) aid in providing more adequate descriptions of student learning. A common strategy in formulating developmental tests involves including core items used for comparison purposes and additional test items beyond the minimum to assess

development beyond the "core."

When using a test publisher developed criterion referenced test, certain considerations should be made in selecting an appropriate measure. First, traditional reliability and validity measures are not generally applicable to criterion referenced tests because of reduced variability (i.e., you expect most students to master a criterion referenced test because you are assessing exactly what you taught) and secondly, test content and objectives should be the same or closely aligned to the substance of the subject being taught.

Diagnostic Tests

Diagnostic tests are defined as:

> "Tests designed to analyze the individual's specific strengths and weaknesses in a subject and to suggest causes of the difficulties." (11)

Diagnostic tests, very similar to criterion referenced tests are designed to pinpoint student strengths and weaknesses in a subject area and to suggest causes for student deficiencies. Many diagnostic test kits provide relevant materials that aid in developing student strengths once areas

of weakness have been defined.

Most of the development in diagnostic testing has revolved around the areas of reading and mathematics (Anastasi, 1979). Diagnostic tests range from group tests yielding survey subtest scores to intensive clinical instruments which can be used for in-depth case studies. The latter type of diagnostic tests are most frequently used in assessing learning disabilities and other areas of exceptionality requiring professional clinical expertise in diagnosing and prescribing student needs.

Many diagnostic tests have common weaknesses such as inadequate reliabilities and high intercorrelations among the subtests (which are the source of separate scores). When a diagnostic test contains few items, the two conditions noted dramatically reduce the test's diagnostic reliability. Reliable diagnostic tests that provide survey information can be useful in analyzing student strengths and weaknesses. In many cases, a criterion referenced test is capable of providing similar information.

Summary

The first component of this paper focused on strategies for assessing basic skills needs of special student

populations. As previously noted, an informal needs assessment, consisting of anecdotal information, interviews and student grades, is a subjective indicator of a student's needs. A formal needs assessment, consisting of a specialized survey, questionnaire or test, is an objective indicator of a student's measured strengths and weaknesses. Ideally, informal and formal needs assessments should be used to evaluate student needs. Subjective information merged with objective data aids in presenting the "big picture": in validating the identification of student needs

Fundamentals of Diagnostic and Prescriptive Learning

In the previous section, we looked at formal and informal methods for assessing student needs. We will next explore the components of a diagnostic/prescriptive learning program in which we incorporate needs assessment information.

Diagnostic/Prescriptive Learning is defined as:

> "a learning strategy that involves the inter- (12)
> mingling of three processes: the identification
> of a child's level of achievement, the analysis of
> the content to be taught, and the implementation of
> appropriate instructional procedures."

Diagnostic/Prescriptive approaches to instruction are characterized by their ability to 1. assess student knowledge, 2. measure student capacity to learn, 3. identify student academic weaknesses, and 4. provide instructional opportunities to meet student learning needs. Many diagnostic prescriptive approaches provide materials, manuals and other resources which contain strategies and materials for structuring a student's learning. Once the student's knowledge base has been sampled and her capacity for learning established, then it is possible to analyze the type of content in the learning situation that will help the student achieve mastery.

Many norm referenced tests and most criterion referenced and diagnostic tests relate diagnosed student weaknesses to test objectives that can be used to generate strategies for skills improvement. Criterion referenced and diagnostic tests often include prescriptive manuals that provide instructional strategies that teachers can use to remediate student weaknesses. The teacher would simply analyze student weaknesses based on the areas not mastered in the criteria referenced or diagnostic test, match the areas not mastered to content objectives and instructional strategies, and then provide instruction to the child using materials that he develops or that are developed by the test publisher (e.g., S.R.A. Skills Series). Ongoing diagnostic assessment meshed with learning materials and tests of mastery are notable

features of the diagnostic/prescriptive approach to instruction.

Diagnostic/prescriptive approaches can be used with small and large groups of students. The strategies seem to find most use in laboratory and tutorial settings when a teacher can serve as a resource to small groups of students. Because mastery is the goal of the prescriptive/diagnostic approach, student learning and time usage become more efficient.

Following are considerations that should be made in determining a student's capacity for learning, assessing current levels of knowledge and for implementing a diagnostic/prescriptive approach to learning.

Measurement and Evaluation

In order to make sound educational decisions about students, it is important for a teacher to learn the student's capacity for learning as well as his current level of knowledge. Tests measure a sample of the behavior that we call knowledge and can provide estimates of ability. Once tests have been administered and scored, it is important to correlate the discrepancy between what is known and not known in planning instructional strategies. Thus student knowledge is measured and then evaluated.

Ten steps important to assessment and evaluation are outlined by Hefner and Jolly (1972):

"1. Determine what is to be measured and evaluated. (12)
2. Understand the nature of the thing to be measured and evaluated.
3. Set up criteria that the tests should report.
4. Check available tests against the criteria.
5. Study interpretative manuals and technical manuals that accompany the tests and study test reviews written by competent specialists.
6. Select the test.
7. If tests do not meet the criteria, then select one that most clearly fits or develop a test.
8. Administer and score the test.
9. Evaluate the results.
10. Apply the results as a guide to teaching, to placement in self instructional materials, etc."

The first five steps encourage to the teacher to: 1. define what he wants to measure (e.g., reading achievement), 2. learn the characteristics of the test and types of objectives frequently measured, 3. determine minimum standards acceptable in a test that you would select, and 4. find out what is available and what experts say about them by

reviewing resources such as Tests in Print III (Buros, 1983) and the Seventh Mental Measurements Yearbook (Buros, 1972). The fifth, sixth and seventh steps involve selecting a test based on the criteria that you have set and the research undertaken or develop a suitable test. Step eight involves administering and scoring the test. Steps nine through ten are discussed in more detail in the next section which focuses on diagnosis and prescription.

Diagnosis and Prescription

The latter steps noted in the measurement and evaluation process involve the actual diagnosis and prescription of learning needs (i.e., evaluating the results of the administered tests and applying the results as a guide to instruction). The chart on the next page provides a model for instructional diagnosis and prescription in a reading program. The model is presented in the form of a decision tree.

The first step in the model is to determine student needs. The logical strategy is to review a student cumulative folder (if it is available to you) or to administer a test to assess the student's capacity to learn and her existing level of knowledge. After the test records are found in the cumulative folder or the results of the test

administration received, the teacher must evaluate student strengths and weaknesses with an eye directed towards instructional remedies. Questions frequently asked are: (criterion referenced needs assessment questions) Did the student master all of the objectives on the criterion-referenced test? Which objective areas will require review or remediation? (Norm-referenced needs assessment questions) Did the student score two grade placement years below the norm on the reading achievement test? What areas were the weakest in terms of the reading achievement test sections? Based on identified weaknesses, the student is placed in an appropriate prescriptive program.

Examples of prescriptive programs noted in the model are the Sound Reading Program, SRA Reading Labs, Reading for Meaning, Reader's Digest Skill Builders or other (other include individualized or group instruction that is driven by needs that might not be adequately represented in one of the pre-packaged programs). Most prescriptive programs provide numerous exercises within levels, continuous evaluation and individualized pacing. Instruction can be teacher directed, program directed or a combination of the two. The presence of the teacher as a resource is important to the student even if the instruction is program directed.

Another important feature of the diagnostic/prescriptive approach to learning is that periodic re-evaluation helps to

refine the original diagnosis and to focus on areas of instruction needing additional support.

Summary

The second component of this paper focused on applying various strategies for assessing student needs to the actual dynamics of the diagnostic/prescriptive approach to learning. We learned that application of the diagnostic/prescriptive approach to learning involves identifying the child's level of achievement, analysis of the content to the taught and the considerations that should be made in selecting and implementing the appropriate instructional procedures. Finally, we looked at a model for developing a group approach to diagnostic/prescriptive learning and applied the model to one student with weaknesses in reading.

What's Next

It is simple, sometimes, to look at the world as a simple place with little variability in the way that we do things. You have reviewed a resource paper that highlighted the process of determining needs and developing a diagnostic/prescriptive approach to learning. The questions that have not been answered include: What types of

diagnostic/prescriptive learning approaches exist? What does the research literature say about diagnostic/prescriptive approaches? What are some potentially useful criterion-referenced tests available for use in determining student needs? The answers to these questions are contained in the Appendix.

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APPENDIX

Glossary

Achievement Test - Measures constructed to assess the extent of an individual's knowledge.

Aptitude Test - Measures designed to find out about an individual's talent or capacity for particular endeavors.

Criterion-Referenced Test - A test designed to provide information on the specific knowledge or skills possessed by a student in a particular subject area.

Diagnostic/Prescriptive Approach to Learning - A learning strategy that involves the intermingling of three processes: the identification of a child's level of achievement, the analysis of the content to be taught, and the implementation of appropriate instructional procedures.

Diagnostic Test - A test designed to analyze the individual's specific strengths and weaknesses in a subject and to suggest causes of the difficulties.

Grade Equivalents - A type of norm which assigns achievement on a test or battery of tests according to grade norms.

Intercorrelation - A correlation of one variable (or test) with another in a group of variables (or tests).

Needs Assessment - Collection of information that helps to determine needs, deficits, etc. (e.g., through an interview, survey, or testing).

Norm Referenced Test - A test designed to measure the achievement of an individual or group as compared with the achievement of other students who have taken the same test under standardized conditions.

Percentile Ranks - A converted score which represents the number of cases of students falling below a certain score.

Questionnaire - A set of questions dealing with a single topic or a set of related topics to be answered by the subject.

Raw Scores - A score that is presented in terms of the original test units (e.g., the actual number of correct responses).

Reliability - The dependability of a test reflected in the consistency of its scores upon repeated measurements of the same group.

Scale Scores - A derived score produced from a single, equal-interval scale of scores across all grades (e.g., scale scores are frequently used in research studies because they are equal-interval scores).

Standard Scores - A derived score which uses as its unit the standard deviation of the population upon which the test was standardized.

Validity - The property that indicates that a test measures what it was intended to measure.

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Criterion-Referenced and Diagnostic Tests

Buswell-John Diagnostic Test for Fundamental Processes in Arithmetic	Bobbs-Merrill
Diagnosis: An Instructional Aid Series-- Mathematics Reading	Science Research Associates
Diagnostic Reading Scales, Revised	CTB/McGraw-Hill
Diagnostic Reading Tests	Committee on Diagnostic Tests
Durrell Analysis of Reading Difficulty: New Edition	Psychological Corporation
Durrell Listening-Reading Series	Psychological Corporation
Nelson-Denny Reading Test	Houghton-Mifflin
Prescriptive Mathematics Inventory	CTB/McGraw-Hill
Prescriptive Reading Inventory	CTB/McGraw-Hill
Skills Monitoring System: Reading	Psychological Corporation
Stanford Diagnostic Arithmetic Test	Psychological Corporation
Stanford Diagnostic Reading Test	Psychological Corporation

Norm-Referenced Tests

ACT Battery of the American College Testing Program	American College Testing Program
California Achievement Test	CTB/McGraw-Hill
Contemporary Mathematics Test	CTB/McGraw-Hill
Content Evaluation Series: Mathematics	Houghton-Mifflin
Cooperative Mathematics Tests	Addison-Wesley Testing Service
Differential Aptitude Tests	Psychological Corporation
Iowa Tests of Educational Development	Science Research Associates
Metropolitan Achievement Test	Psychological Corporation
Scholastic Aptitude Test	Educational Testing Service
School and College Ability Tests-Series II	Addison-Wesley Testing Service
Sequential Tests of Educational Progress	Addison-Wesley Testing Service
SRA Achievement Series	Science Research Associates
SRA Primary Mental Abilities	Science Research Associates
SRA Reading and Arithmetic Indexes	Science Research Associates
Stanford Achievement Test	Psychological Corporation
Stanford Test of Academic Skills	Psychological Corporation
Tests of Academic Progress	Houghton-Mifflin
Wide Range Achievement Test	Guidance Associates of Delaware

Diagnostic/Prescriptive Instructional Programs That Work

Source: Educational Programs That Work (8th Ed.). National Diffusion Network, Department of Education, 1981.

PROJECT

PROJECT CATCH-UP

A diagnostic/prescriptive laboratory program in reading and/or math.

target audience

Approved by JDRP for students in the lowest quartile in reading or math, grades 1-6. This program has been used with students at other achievement levels and in grades K-9, but no evidence of effectiveness has been submitted to or approved by the Panel.

description

Project Catch-Up is a laboratory program of continuous diagnosis and pinpoint teaching in reading and/or math skills for underachieving children.

Classroom and laboratory teachers work closely to identify program participants and formulate a laboratory schedule that does not cause any child to miss reading or math in the regular classroom.

Laboratory teachers identify individual needs by means of continuous diagnostic testing. They then select materials and methods from a wide variety of high-interest resources available in the laboratory to meet the child's needs. Children spend an average of one-half hour per day in the laboratory, in groups of one to three, working with the teacher on skill deficiencies. The program is designed in such a way that each child experiences success and moves toward the acquisition of more difficult skills armed with increased confidence.

A wide variety of readily available instructional materials and equipment, selected by project teachers, is available in the laboratory. Results can be achieved with limited resources if a diagnostic/prescriptive method is used in a success-oriented environment. Staff have identified materials according to priority.

With a few well-developed techniques, teachers have made participating children feel that the lab is "their lab" to such a degree that it has become necessary to have guest days to satisfy the desire of other children to participate even in a small way in the laboratory. Project Catch-Up's special events for parents consistently draw more parents than any other school function.

evidence of effectiveness

The project utilizes pre- and posttesting (Comprehensive Test of Basic Skills in reading and math). For the past 10 years, the median student has consistently gained 1.5 months in reading and math skills for each month in the program (data validated by Research Management Corporation). Originating-site students are low achievers in a low-income urban community. Similar gains by adopters in rural and middle-income schools have been validated. Annual evaluation data are available.

implementation requirements

A school district interested in adopting or adapting Project Catch-Up should be able to: provide a laboratory of any size (we started in a closet, but at present have a classroom); administer diagnostic tests to participating children; provide professional instruction to meet diagnosed needs; and use high-interest materials insofar as they are available. The project can be adopted by a grade level or a school, and it can offer instruction in reading, math, or both.

financial requirements

Tests and instructional materials: from $.50-$20 per child depending on funds available. The project itself sells no materials; all are commercially available and thoroughly tested; many are already found in most schools. Equipment: three high-interest instructional machines, maximum cost $300 per laboratory; most schools already have at least one such machine. Staff needs may be met by reassignment of personnel in any school with Chapter I funding.

services available

Awareness materials are available at no cost. Visitors are welcome at project site on Fridays when school is in session. Project staff are available to attend out-of-state awareness meetings. Training is conducted at project site (adopter pays only its own costs). Training is also available at adopter site (costs to be negotiated). Implementation and follow-up services are available to adopters (travel and per diem must be paid).

contact

Fay Harbison; Newport-Mesa Unified School District; P.O. Box 1368; Newport Beach, CA 92663. (714) 760-3300.

Developmental Funding: USOE ESEA Title I JDRP No. 34 Approved: 4/4-5/73

PROJECT COMPUTER-ASSISTED-DIAGNOSTIC-PRESCRIPTIVE PROGRAM IN READING AND MATHEMATICS (CADPP)

A diagnostic/prescriptive pull-out program utilizing resource labs and computer assistance to prepare remedial reading and remedial mathematics educational plans and weekly prescriptions.

target audience

Approved by JDRP as a reading program for grades 3-9 and as a math program for grades 3-7.

description

CADPP was developed as a response to the SRA test scores of Buckingham County Public Schools' educationally disadvantaged students which showed an annually increasing gap between normal expected growth and actual growth. The resulting resource laboratory program combined with a computerized information retrieval system allows for accurate diagnosis of a child's needs in reading comprehension and computation and provides the teacher with prescriptions (materials and methods) that help in teaching to those needs.

A locally developed battery of standardized criterion-referenced tests is used for diagnosis and evaluation. The computer system prescribes learning activities based on individual achievement levels, learning modalities, and interests; channels students to the learning centers; tracks progress to ensure that prescriptions are not repeated; and maintains continuous progress reports for the students, teachers, and parents.

evidence of effectiveness

Three-year fall-to-fall testing (1976-78) with the Science Research Associates Achievement Series documented positive trends through standard score gains. Grade 3 students showed the highest gains in reading, with 23 NCEs; grades 6 and 7 evidenced 8 NCEs. Gains in math ranged between 22 NCEs for grades 4 and 5, and 6 NCEs for grade 3. Overall, the gap between scores of participating and nonparticipating students was narrowed.

implementation requirements

CADPP can be adopted by a single classroom unit or by several units. Extensive staff development and training in criterion-referenced design and development, instructional management systems, performance/process evaluation, monitoring, and individualized instruction via the learning station approach to management are required.

financial requirements

A fee of $500 is charged for the CADPP software. Optional CADPP criterion-referenced tests are available at $3 per test booklet (nonconsumable); however, if adopters do not use CADPP diagnostic tests, they must have access to diagnostic test results.

services available

Awareness materials are available at no cost. Visitors are welcome at project site by appointment. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training is conducted at project site (costs to be negotiated). Training is also available at adopter site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

contact Debra J. Glowinski, Federal Programs Director; Title I Office; Box 292; Dillwyn, VA 23936. (804) 983-2714 or -2863.

Developmental Funding: USOE ESEA Title I JDRP No. 79-15 Approved: 6/12/79

PROJECT CONCEPTUALLY ORIENTED MATHEMATICS PROGRAM (COMP)

A sequential, small-group mathematics program designed to meet the needs of all children.

target audience

Approved by JDRP for students of all abilities, grades 1-8. This program has been used in other settings with grades 9-12, but no evidence of effectiveness has been submitted to or approved by the Panel.

description

The Conceptually Oriented Mathematics Program is a management system that provides a list of sequential skills to be mastered in the basic skills area of mathematics. It is designed to meet individual needs through small-group instruction.

Students are tested to determine their individual strengths and weaknesses and are grouped accordingly. The program provides continuous progress through the use of materials organized into 25 instructional levels. Eight broad areas are developed for mastery in these 25 levels. Each level has been broken into two or more steps. (Step Z in each level provides additional materials for the highly motivated student.)

The program utilizes cooperative planning and teaching. The ideal instructional situation is one in which each teacher has no more than two instructional groups. It is the intent of the program to encourage teachers to be creative in their teaching and to adapt the program to the learning styles of their students.

Key Elements: placement testing; teaching by objectives via COMP guide books; small-group instruction; criterion-referenced testing; cooperative teaching and planning; continuous progress system for students; administrator involvement; school-community-parent relations.

evidence of effectiveness

Data from 1971-72 pre- and posttesting of COMP students in grades 1-8 using Iowa Test of Basic Skills showed that 77% increased their percentile ranking pre to post. Further annual testing of the same students showed continued gains: 64% in 1972-73 and 58% in 1973-74.

implementation requirements

One day of training prior to implementation is required. All teachers and administrators involved in adoption should attend. One day of training following implementation is also required. Adopter school's needs will determine the date. Adopter designates one staff member to serve as project contact person and coordinator.

financial requirements

Exclusive of textbooks and the coordinator's salary, the basic cost is approximately $45/teacher plus cost of test materials. Additional materials for instruction and enrichment can be added as finances become available.

services available

Awareness materials are available at no cost. Visitors are welcome at demonstration sites anytime by appointment. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training is conducted only at adopter site. Implementation and follow-up services are available to adopters (all expenses must be paid).

contact L. Leon Webb, Director; 161 E. First St.; Suite 5; Mesa, AZ 85201. (602) 969-4880.

Developmental Funding: USOE ESEA Title III JDRP No. 74-114 Approved: 12/6/74

PROJECT GEMS: Goal-based Educational Management System

A goal-based educational management system developed to support diagnostic/prescriptive teaching for mastery learning.

target audience

Approved by JDRP for grades K-6. This program has been used with grades 7-12, but no evidence of effectiveness has been submitted to or approved by the Panel.

description

With GEMS, teachers can efficiently diagnose skills in reading and prescribe learning activities for mastering these skills. GEMS defines reading in terms of units of study (goal-units) for each grade level. The goal-units are divided into six strands -- phonics, structure, vocabulary, comprehension, study skills, and affective reading. Pre- and posttests are provided for each goal-unit, and placement tests are provided for each strand to help teachers diagnose the appropriate instructional level for each student. Multiple strategies and materials to aid in teaching for mastery are identified and coded to the GEMS Reading System. A GEMS Book is provided for each level; these books are intended to be used by the teacher as a guide in implementing the program with students. Each book contains introductory information; goal-units, pre- and posttests, and test keys; model strategies for each goal-unit; and an appendix of information and teacher resources.

GEMS reading incorporates three basic retrieval systems: paper and pencil, key sort cards, and computer. Retrieval systems are developed to monitor student progress and to aid teachers in grouping students in instructional sequences. Mastery tests are available to check for learning retention and competency relative to graduation requirements. GEMS makes it possible for teachers to pursue the goal of mastery learning by identifying and communicating to students what they are expected to learn, indicating the appropriate level for instruction, and accommodating a variety of teaching approaches to meet student needs. GEMS places accountability of student and teacher in proper perspective by helping teachers evaluate the quality of their own teaching as well as their students' performance. The staff development component of GEMS reading is designed to train teachers and administrators in the use of the management system for diagnostic/prescriptive teaching. Workshops include: the GEMS Book, Material Management, Procedural Guidelines, Reading Process, Directed Reading, Classroom Management, Testing, and Retrieval.

evidence of effectiveness

The GEMS research design yielded statistically and educationally significant gains in reading comprehension and vocabulary for each grade level, grades 1-6, in 12 pilot schools. The Stanford Achievement Test was used in grades 1 and 2 and the Iowa Test of Basic Skills in grades 3-6. The research study was conducted over a two-year period (1976-78).

implementation requirements

GEMS can be implemented by a grade level, a reading department, a school, or a district. Twelve hours of staff training are required to begin the implementation process. At least one follow-up session is recommended. A GEMS Book and an inservice manual are required for each teacher and administrator. Development of local leadership is emphasized.

financial requirements

Costs are contingent upon group size, location, and levels implemented. Materials cost is $40 per teacher for a grade-level GEMS Book with tests and strategies and an inservice manual. Maintenance costs can be absorbed within a regular school budget.

services available

Awareness materials are available at no cost. Visitors are welcome at project site any time by appointment. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training is conducted at project site (costs to be negotiated). Training is also available at adopter site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

contact Beverly Lloyd, GEMS Project Director; Jordan School District; 9361 S. 400 East; Sandy, UT 84070. (801) 566-1521.

Developmental Funding: USOE Right to Read, ESEA Title IV-C, and Local

JDRP No. 79-2 Approved: 2/16/79

Compiled Summer 1981

PROJECT HOSTS: Help One Student To Succeed

A diagnostic/prescriptive/tutorial approach to basic reading skills.

target audience

Approved by JDRP for students who need remedial reading instruction, grades 2-12. It has been used in other settings with kindergarten and first-grade students, but no evidence of effectiveness has been submitted to or approved by the Panel.

description

The HOSTS program operates from a learning resource center staffed by a reading specialist and an aide. Students in the HOSTS program are first evaluated, then individual prescriptions are developed, matching coded instructional materials to identified reading deficiencies. Informal reading inventories are used to screen and identify students. Each student in the project is then given a number of criterion-reference tests to pinpoint individual reading deficiencies. From these tests a reading profile is developed by the specialist, recording the student's ability levels in the various skills areas. Individual lessons are developed from this profile. The HOSTS Cross Referencing Manuals are used by the instructional staff to plan prescriptive programming tailored to individualized needs. In addition, specific directions for tutor implementation of the prescribed program lessons are included in the student profiles. Daily student progress is recorded by the tutors and incorporated into the profile as well. Teaching procedures in the HOSTS program are designed to enable teachers to discover the abilities of each student and then allow the student to advance at his/her individual learning rate. The instructional climate is humane and reflects concern for each student's worth. Community volunteers work as tutors on a one-to-one basis with students, following prescriptions developed for each student by the reading specialist.

evidence of effectiveness

Program evaluation consists of normative (CTBS, CAT) and criterion-referenced tests. Student achievement scores indicate that, on the average, students doubled their learning rate while in HOSTS. Specific gains by grade levels are available in a detailed report. (Financial and evaluation data collected 1973-81.) Data from adoption sites indicate student gains averaged over 14 NCE (Normal Curve Equivalency) scores.

implementation requirements

Potential adopting districts are selected on the basis of the following criteria: needs assessment, district's resources (commitment), evaluation plan, and willingness to serve as a model for others. Potential adopters will be asked to send key personnel to visit the developer project. Upon completion of the visitation period, those districts that remain interested may apply to become HOSTS sites.

financial requirements

Start-up cost ranges from $30 to $115 per pupil. Continuation cost ranges from 50¢ to $12 per pupil per year, depending upon existing resources. (Figures based on 2,000 target pupils.)

services available

Awareness materials are available at no cost. Visitors are welcome any time by appointment at project site and additional demonstration sites in home state and out of state. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training is conducted at project site (costs to be negotiated). Training is also available at adopter site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

contact Bill Gibbons, Executive Director; HOSTS Non-Profit Corporation; 5802 MacArthur Blvd.; Vancouver, WA 98661. (206) 694-1705 or 693-1775.

Developmental Funding: USOE ESEA Titles I, II, and III JDRP No. 75-6 Approved: 1/15/75

Compiled Summer 1981

PROJECT READING -- INDIVIDUALIZED REMEDIAL LABORATORIES
MATH -- INDIVIDUALIZED REMEDIATION

A project designed to provide continuous diagnosis of student needs and daily prescriptions for learning improvement.

target audience Approved by JDRP as a reading program for children ages 6-18. This program has been used in other settings as a mathematics program, but no evidence of effectiveness has been submitted to or approved by the Panel.

description The reading laboratories have been developed for high concentration on the improvement of basic reading skills. A reading laboratory staffed by one special reading teacher and a paraprofessional accommodates 80-120 students daily for the entire school year. Each student's daily prescription includes two or more activities designed to meet his/her needs. Students' prescriptions include programmed and self-instructional materials purchased from a variety of vendors or developed by both consultants and project teachers. Emphasis is placed on inservice education, focusing on cognitive reading skills and on the management and use of individualized instruction in the classroom. Inservice education is provided through workshops, consultant classroom visits, and local supervisory services and support. The mathematics program provides systematic remedial instruction in areas of individual student weaknesses. A teacher and a paraprofessional work with 80-120 students daily in a specially equipped classroom. The mathematics laboratories are characterized by a focus on carefully selected essential concepts, skills, and applications with number ideas and computation; an individualized approach to the instruction; a meaningful approach to the learning of content; careful monitoring of student achievement; and teacher guidance in a supportive atmosphere. The program is based on project-developed materials, reinforced by a variety of supplementary resources and activities. Daily work is guided by individual prescriptions consisting of two or three types of activities. Inservice education receives a strong emphasis through workshops, consultant visits, and local supervisory services and support. There is an ongoing evaluation of project content, materials, instructional procedures, and overall achievement pattern of students.

Contact the project about available training and other services.

contact Virginia Morgan; Reading Laboratories; Dougherty County School System; P.O. Box 1470; Albany, GA 31702. (912) 436-6544.

Developmental Funding: USOE ESEA Title I JDRP No. 74-107 Approved: 10/18/74

Compiled Summer 1981

PROJECT READING INSTRUCTION AND PUPIL PERSONNEL SERVICES (RIPPS)

A team-approach program to improve reading achievement and self-concept of reading-disabled students.

target audience Approved by JDRP for pupils grades 1-4 reading below grade level. This program has been used in other settings with pupils in grades K and 5-10, but no evidence of effectiveness has been submitted to or approved by the Panel.

description The RIPPS project is a team approach involving classroom teachers, reading specialists, guidance personnel, special services, and parents to improve reading achievement and self-concept of disadvantaged students. The thrust of the program is to identify the child in need of service, diagnose the child's problems, develop an individualized educational program to alleviate the problems, and continually evaluate the child and the program. Through a team effort, the total child is made to function more effectively. The project's main component is a reading services program that serves students directly through individual and small-group remedial instruction and indirectly through a consultant service to their classroom teachers and parents. Each program participant is evaluated by a guidance/social worker team with output to remedial reading and classroom teachers. In cases where initial evaluation finds that an in-depth evaluation is necessary, services of a consulting psychological/psychiatric team are employed.

Another important component is total parent involvement, including regularly scheduled parent-teacher conferences, formalized 10-week parent study groups, and parent counseling. The project attempts to identify educationally disadvantaged students as early as possible by providing, together with the school department, an early-identification program that involves health and developmental screening of pre-kindergarten students, parent information sessions, and a special readiness program once the child enters kindergarten. The highly successful secondary program emphasizes the teaching of reading through the content areas, with the reading specialist providing (for the most part) consultant services to teachers of identified students.

Contact the project about available training and other services.

contact Michael W. Mello, Director of Grant Programs; Office of Grant Programs; Portsmouth School Department, Portsmouth, RI 02871. (401) 683-1450.

Developmental Funding: USOE ESEA Title I JDRP No. 74-124 Approved: 12/16/74

Compiled Summer 1981

PROJECT VRP: Reading Power in the Content Areas (Vocational Reading Power)

A staff-development project designed to help content area teachers minimize the gap between student reading abilities and reading requirements of printed instructional material.

target audience

Approved by JDRP as a staff development project for vocational programs whose students represent a broad range of ethnic and socioeconomic backgrounds, grades 11 and 12. This program has been used in other settings at the postsecondary level and in junior and senior high nonvocational programs, but no evidence of effectiveness has been submitted to or approved by the Panel.

description

VRP is a staff development program designed to make content-area teachers aware of the gap between student reading abilities and the reading requirements of printed instructional materials and to provide teachers with methods of minimizing the effects of that gap. VRP has successfully been adopted in more than 400 secondary vocational and nonvocational schools. The goals of the project are: to narrow the gap between student reading ability and the skill level required to read printed instructional materials; to enrich the knowledge, attitudes, and skills of content-area teachers as these relate to the use of textbooks and other reading-related activities; and to increase student learning of content.

The program consists of five components. Testing trains teachers to use formal and informal tests and inventories to assess the reading abilities of their students. Readability Analysis provides teachers with the knowledge and tools to analyze the reading levels of printed instructional materials, to apply this knowledge when selecting texts, and to modify and improve use of the printed materials to fit students' reading abilities. Fifteen Reading in the Content Area Modules provide for additional staff development in content-area reading. The modules, which are designed to be used in group or individual inservice, provide basic strategies and procedures that can be incorporated into any classroom curriculum. Vocabulary Development focuses on practical vocabulary activities that the teacher can incorporate into the total curriculum. In addition, for vocational adopters, project-developed vocational student reading-support materials in the form of 32 Occupationally Specific Key Word Glossaries are available. Instructional Materials System involves the development of a resource system that provides teachers with ready access to a wide variety of instructional materials in their fields.

evidence of effectiveness

Using the Gates-MacGinitie, Survey F, pretest comprehension data indicated 70% of project students were reading below eleventh-grade level and 20% below seventh-grade level. Posttest data revealed percentages of 57% and 12% respectively. Pre- and posttest gains were significant at the .05 level. A pre/post teacher training test indicated significant growth in teacher knowledge of test utilization and reading-related activities.

implementation requirements

A minimum of one staff person with a background in curriculum development and/or reading acts as part-time director/coordinator. Involvement of administrators, content-area instructors, and reading consultants (if used) is required. Once the district completes a training and implementation plan, the D/D provides a training workshop lasting two or three days, depending upon the needs of the adopting/adapting district. Staff development time must be provided.

financial requirements

No new equipment or staff are required. Cost of individual Key Word Glossaries varies; entire set of 32, $95. Adopters of this component may purchase glossaries for each student or one or two per classroom. Cost of individual Reading in the Content Area Modules varies; entire set of 15, under $600. Adopters of this component typically purchase a minimum of five modules and a maximum of one complete set. Training manual: $10. each. (Prices subject to change.)

services available

Awareness materials are available at no cost. Visitors are welcome any time by appointment at project site and additional demonstration sites in home state and out of state. Project staff are available to attend out-of-state awareness meetings (costs to be negotiated). Training is conducted only at adopter site (all expenses must be paid, including travel and trainer fee of $150 per day). Implementation and follow-up services are available to adopters (all expenses must be paid).

contact Eileen Ostergaard, or Carol Burgess; The EXCHANGE; 166 Peik Hall; University of Minnesota; Minneapolis, MN 55455. (612) 376-8234.

Developmental Funding: USOE ESEA Title III JDRP No. 74-45 Approved: 5/14-15/74

Compiled Summer 1981

PROJECT INDIVIDUALIZED LANGUAGE ARTS: Diagnosis, Prescription, and Evaluation

A project combining a language-experience approach with techniques derived from modern linguistic theory to enhance skills in written composition.

target audience

Approved by JDRP for grades 3-6. This program has been used in other settings with grades 1-2 and 7-12, language arts, English content-area classes, college basic skills programs, adult education programs, special education programs, and independent and supplementary programs in written composition, but no evidence of effectiveness has been submitted to or approved by the Panel.

description

At least three times a year, the teacher evaluates writing samples composed by students on self-selected topics. Utilizing criteria common to nearly all language arts programs, the teacher is then able to assign priorities to the needs of the whole class, groups of students, and individual youngsters. For each objective stemming from this diagnosis, a teacher's resource manual prescribes a variety of writing or rewriting techniques for all content areas involving writing. Motivation for writing is strengthened by a "communication spiral" that links composition to the other language arts and to real-life experience. A record keeping system permits students, teachers, administrators, and parents to observe growth in writing proficiency from month to month and grade to grade. The program can be combined readily with existing language arts curricula and objectives.

evidence of effectiveness

Since 1971, evaluations utilizing holistic or criterion-referenced designs with writing samples from students, grades 1-12, in a variety of settings (urban, suburban, and rural) consistently show significant gains in vocabulary, sentence structure, organization, mechanics, and grammar for students in ILA classes.

implementation requirements

District makes a definite commitment to improving basic writing skills of all students. District sends initial cadre of teachers and administrators to New Jersey (or elsewhere by arrangement) for two-day training and purchases copies of Teacher's Resource Manual and Management Manual (for administrators). District assumes responsibility for extending program to other grades, classes, and/or schools in future years, with trained administrators conducting inservice programs. District reports to project (directly or through NDN Facilitator) on extent and quality of implementation.

financial requirements

District assumes (or shares with NDN Facilitator) the costs of releasing teachers and administrators for training workshops. District assumes (or shares with NDN Facilitator) per diem, travel, and lodging costs for project staff. Teacher's Resource Manual: $10 per copy. Management Manual (for administrators): $2 per copy.

services available

Awareness materials are available at no cost. Visitors are welcome any time by appointment at project site and additional demonstration sites in home state and out of state. Project staff are available to attend out-of-state awareness meetings (travel and per diem must be paid). Training is conducted at project site only during three to four weeks throughout the year (all expenses must be paid, including trainees' travel and per diem, and $10 for manual). Training is also available at adopter site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

contact Jeanette Alder, Project Director; Woodrow Wilson School; Hauxhurst Ave.; Weehawken, NJ 07087. (201) 865-1506.

Developmental Funding: USUE ESEA Title III JDRP No. 74-55 Approved: 5/23/74

Compiled Summer 1981

PROJECT STAMM: Systematic Teaching And Measuring Mathematics

A complete mathematics curriculum for kindergarten through Algebra II-Trigonometry, including alternative high school courses.

target audience

Approved by JDRP for students of all abilities, grades K-8. This program has been used in other settings with grades 9-12, but no evidence of effectiveness has been submitted to or approved by the Panel.

description

The major objective of the program is to provide continuous progress in mathematics for the entire school experience of all students, kindergarten through senior high school. The STAMM program represents a complete system that can be adopted or adapted by other districts. A framework of objectives and assessment by criterion-referenced tests are basic to STAMM. Careful monitoring of student progress, measurement of mathematics competencies, and alternative courses at the high school level are featured. The program may be used successfully in many different classroom situations, including small-group instruction, large-group instruction, individualized instruction, team teaching, and math lab. Resource material is provided for each objective; textbooks, manipulative materials, and teacher-made resources may be incorporated as well.

Since STAMM is based on continuous progress, it is important for a school using STAMM to keep complete records on each student and to test each student's progress frequently. This enables a teacher, in the fall, to continue a student from where he/she left off in the spring. A teacher with one grade level of students may need to be familiar with more than one level of the program to accommodate continuous progress.

The basic skills continuum for grades K-8 is covered in levels A, B, C, D, E, F, GE, G, and H. High school courses are defined for Mathematics Competencies, Algebra I, Geometry, Algebra II, Trigonometry, Applied Math, Vocational Math, and Rapid Calculation.

Special materials are packaged for Title I and special education emphasis for use in regular classrooms and labs.

evidence of effectiveness

Between two thirds and three fourths of all Jefferson County students now score above the national norm on the Comprehensive Test of Basic Skills at grades 4, 6, and 8. This achievement has been consistent from 1973 through spring 1980. Prior to implementation, roughly half the students scored above the national norm.

implementation requirements

STAMM guides, tests, and workbooks may be used by a single teacher or an entire school system. The more levels involved in implementation, the greater the gains from the continuous-progress aspect of STAMM. A two-day training session prior to implementation is recommended. Weekly or monthly meetings are recommended for the local staff. STAMM does not dictate teaching style, and may be used in any classroom setting. Textbooks may be used as an integral part of the program, but experience advises that they be supplemented with teacher-made or STAMM resource materials.

financial requirements

STAMM teachers' manuals, K-12, $15 each. Each teacher needs one manual for each level or course taught. Test books and workbooks: $3.25 each for single copies, $2.75 each for 11-100 copies, and $2.50 each for 101+ copies.

services available

Awareness materials are available at no cost. Visitors are welcome at project site any time by appointment. Project staff are available to attend out-of-state awareness meetings (travel and per diem must be paid). Training is conducted at project site on Sept. 10-11 and Nov. 16-17, 1981; Feb. 8-9, 1982 (costs to be negotiated). Training is primarily available at adopter site (costs to be negotiated). Implementation and follow-up services are available to adopters (costs to be negotiated).

contact Glyn H. Sharpe, STAMM Project Director; Jefferson County Schools; 1209 Quail St.; Lakewood, CO 80215. (303) 231-2341.

Developmental Funding: USOE ESEA Title III JDRP No. 76-87 Approved: 6/23/76

Compiled Summer 1981

PROJECT IMPROVEMENT OF BASIC READING SKILLS

Reading centers providing an individualized approach to remedial reading for educationally deprived children.

target audience Approved by JDRP for pupils in grades 1-8 who are reading below grade level.

description Reading centers established in participating schools are staffed by a reading teacher and an aide who work with 10-12 children per period every day for the regular school term. Diagnostic tests are administered to determine specific needs of individual children. A "Need Sheet" is prepared for each child, providing a written prescription to help in mastering basic reading skills and to reinforce classroom learning. A "Weekly Plan" sheet is maintained for each class, listing plans for each child. Correlation with regular classroom activity is stressed. Teacher's aides and parents are assigned to work with children needing additional help over and above that received in the classroom and reading center. Parent participation, through volunteer work and workshops, is a significant aspect of the project. Individualized attention shows the pupil that he/she is important and can excel in some way, reinforcing the primary goal of the project: to meet individual needs of students and help them achieve their potential.

Materials used include the Hoffman Reading Program supplemented by numerous other commercially available and teacher-made materials.

Students are selected for the program on the basis of scores from standardized tests (below 50th percentile), scores from diagnostic tests, cumulative record cards, teacher opinions, posttest scores of previous Title I students, and learning disabilities.

Contact the project about available training and other services.

contact Elizabeth Dickson; Improvement of Basic Reading Skills; Sylacauga City Schools; P.O. Drawer 1127; Sylacauga, AL 35150. (205) 245-5345 or 249-0393.

Developmental Funding: USOE ESEA Title I JDRP No. 74-109 Approved: 10/18/74

Compiled Summer 1981

PROJECT IMPROVING ACHIEVEMENT (READING) THROUGH USE OF TEACHERS AND TEACHER AIDES

A personalized and concentrated reading improvement program for secondary students.

target audience Approved by JDRP for students grades 10-12 reading two or more years below grade level with low or failing grades in English classes. It has been used in other settings with grades 7-9, but no evidence of effectiveness has been submitted to or approved by the Panel.

description This project treats the problem of reading deficiency in secondary students through personalized and concentrated interaction: personalized in that the adult/student ratio is most often one-to-one; concentrated in that instruction occurs daily, one period per day. Each student's reading skills are thoroughly analyzed during the first few weeks. Instruction and rebuilding of attitude begin on a personalized basis at the point of identified deficiency (in many cases at point zero in the reading process). Individual records of areas of weakness and patterns of improvement are maintained. The importance of personal interest and positive reinforcement from the adult aide cannot be overemphasized. Reading instruction develops within the context of the total language arts curriculum. The project teacher and a team of eight aides supplement the regular teacher's instruction.

Contact the project about available training and other services.

contact Leon West, Director, Sky View High School Project; Cache County School District; 2063 North 12th East; Logan, UT 84321. (801) 752-3925.

Developmental Funding: USOE ESEA Title I JDRP No. 74-110 Approved: 2/25/75

Compiled Summer 1981

PROJECT HIGHER HORIZONS 100

A program for students with reading retardation problems, with a coordinated effort in language arts development in all content areas.

target audience Approved by JDRP for students in grade 9 with reading retardation problems. This program has been used in other settings with students in grades 7, 8, and 10 with reading retardation problems, but no evidence of effectiveness has been submitted to or approved by the Panel.

description The primary goal of the reading section of the program is to enable a student to make eight months' reading progress during the school year and thereby regain lost ground. Other goals are improvement of speech, mathematics, science, and social studies; helping students to adjust to high school behavior patterns; expanding students' background of experience; and improving self-concept. After completing one year in the program, students are evaluated and may return to the regular school program. Enrollees are within normal range of intelligence and without serious emotional problems but have one to four years of reading retardation. The speech of many is affected by a second language or dialect. Students are counseled frequently by the Higher Horizons counselor and instructors. The counselor-student ratio is one counselor to 100 students. Collaboration between instructors in the various subjects makes it possible to remedy weaknesses in language arts and other classes.

Contact the project about available training and other services.

contact John Di Benedetto, Resource Coordinator; Higher Horizons 100; Hartford Public High School; 55 Forest St.; Hartford, CT 06105. (203) 278-5920. Robert Nearine, Title I Director; Hartford Board of Education; 249 High St.; Hartford, CT 06103. (203) 566-6074.

Developmental Funding: State ESEA Title I JDRP No. 74-26 Approved: 4/29/74

Compiled Summer 1981

PROJECT HIT: High Intensity Tutoring

An individualized instruction program for sixth-, seventh-, and eighth-grade students identified as deficient in basic grade-level reading and/or mathematics skills.

target audience Approved by JDRP for grades 6-8.

description HIT centers provide an individualized instruction program designed (in the reading center) to develop vocabulary and comprehension skills and (in the math center) to increase computational abilities, problem-solving abilities, and understanding of mathematical concepts. Sixth-, seventh-, and eighth-grade students identified as deficient in reading and/or mathematics are selected for HIT participation on the basis of performance at least one year below grade level on standard tests and by observations of the classroom teacher. The HIT method actively involves tutors, tutees, a certified teacher, and two paraprofessional aides. Tutoring focuses on peer-teaching and reinforcement techniques developed primarily from principles of programmed instruction. Tutors from grades 7 and 8 assist sixth-grade tutees in developing grade-level skills and reinforce correct performance. This interaction also helps the tutors upgrade their own skills. Tutees who were in the program during sixth grade are given priority selection as tutors in seventh and eighth grade when skill deficiencies in those tutees still exist. This highlights the importance of reciprocity in the teaching-learning relationship, despite the small differences in ability between tutors and tutees. The two basic HIT center components are the instructional system and the motivational system. The primary features of the instruction program are daily calculation of the percentage of correct responses for each tutee and use of instructional materials that carefully control introduction of new concepts and incorporate frequent review. The motivational system is crucial to optimal student progress. Tutees receive points for correct responses which accumulate in a "bank book" and are redeemable for tangible rewards. Tutors receive points and rewards on the basis of attendance.

Contact the project about available training and other services.

contact Greg Byndrian, Public Information Officer; Highland Park School District; 20 Bartlett; Highland Park, MI 48203. (313) 956-0130.

Developmental Funding: USOE ESEA Title I JDRP No. 74-9 Approved: 1/8/74

Compiled Summer 1981